number of operable channels and the number of channels which when tripped will cause reactor trip.

## 1.7 INSTRUMENTATION SURVEILLANCE

1) CHANNEL CHECK

CHANNEL CHECK is a qualitative determination of acceptable operability by observation of channel behavior during operation. This determination shall include, where possible, comparison of the channel with other independent channels measuring the same variable or radioactive source check of the Area and Process Radiation Monitoring Systems for channels.

2) CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST consists of injecting a real or simulated signal into the channel to verify that it is operable, including alarm and/or trip initiating action.

3) CHANNEL CALIBRATION

CHANNEL CALIBRATION consists of the adjustment of channel output such that it responds, with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including alarm or trip, and shall be deemed to include the CHANNEL FUNCTIONAL TEST.

## 1.8 SHUTDOWN

1) Cold Shutdown

The reactor is in the cold shutdown condition when the reactor is subcritical by at least 1% $\Delta k/k$ and $T_{avg}$ is less than 200 F.

2) Hot Shutdown

The reactor is in the hot shutdown condition when it

## 1.24 GAS DECAY TANK SYSTEM

The GAS DECAY TANK SYSTEM is designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

## 1.25 VENTILATION EXHAUST TREATMENT SYSTEM

A VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through HEPA filters for the purpose of removing particulates from the gaseous exhaust stream prior to the release to the environment. Such a system is not considered to have any effect on noble gas effluents. Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be ventilation exhaust treatment system components.

## 1.26 PROCESS CONTROL PROGRAM (PCP)

The PROCESS CONTROL PROGRAM shall contain the provisions, based on full scale testing, to assure that dewatering of spent bead resins results in a waste form with the properties that meet the requirements of 10CFR61 (as implemented by 10CFR20) and of the low level radioactive waste disposal site at the time of disposal.

## 1.27 OFFSITE DOSE CALCULATION MANUAL (ODCM)

The OFFSITE DOSE CALCULATION MANUAL shall contain the methodology and parameters used in the calculation of offsite doses due to radioactive gaseous and liquid effluents and in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints.

## 1.28 DOSE EQUIVALENT I-131

The DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites", or in NRC Regulatory Guide 1.109, Rev. 1 October, 1977.

3. With the concentration of radioactive material released in liquid effluents to UNRESTRICTED AREAS exceeding the above limits, restore the concentration to within the above limits.

b. Dose

The dose or dose commitment per reactor to a MEMBER OF THE PUBLIC from any radioactive materials in liquid effluent released to UNRESTRICTED AREAS shall be limited, during any calendar quarter, to $\leq$ 1.5 mrem to the total body and to $\leq$ 5 mrem to any organ, and, during any calendar year, to $\leq$ 3 mrem to the total body and $\leq$ 10 mrem to any organ.

1. Calculations shall be performed in accordance with methods described in the ODCM at least once per month to determine the cumulative dose commitment due to liquid effluents.

2. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, prepare and submit a report to the Commission within 30 days, pursuant to Specification 6.9.3.e.

c. Monitoring Instrumentation

The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.9-2 shall be OPERABLE with their alarm/trip setpoints (if applicable) set to ensure that the limits of Specification 3.9.1.a are not exceeded. The setpoints shall be determined in accordance with methods described in the ODCM.

1. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by Specification 3.9.1.c, suspend the release of radioactive liquid effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.

2. With less than the minimum number of radioactive liquid effluent monitors being OPERABLE, take the ACTION shown in Table 3.9-2. If the inoperable instruments are not returned to OPERABLE status within 30 days, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

3. Each radioactive liquid effluent monitor shall be demonstrated OPERABLE by performance of operations at the frequencies shown in Table 4.1-3.

d. Radwaste Treatment

Appropriate subsystems of the liquid radwaste treatment system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses to UNRESTRICTED AREAS due to liquid effluents, when averaged monthly, would exceed 0.06 mrem to the total body or 0.2 mrem to any organ.

1. Doses due to liquid releases shall be projected at least once per month, in accordance with the ODCM, unless the liquid radwaste treatment system is being used.

2. With radioactive liquid waste being discharged without treatment and in excess of the above limits, prepare and submit a report to the Commission within 30 days pursuant to Specification 6.9.3.f.

TABLE 3.9-1 (Cont.)

TABLE NOTATION

b. The principal gamma emitters for which the LLD limit specification will apply are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level. When a radionuclide's calculated LLD is greater than its listed LLD limit, the calculated LLD should be assigned as the activity of the radionuclide; or, the activity of the radionuclide should be calculated using measured ratios with those radionuclides which are routinely identified and measured.

c. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.

d. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released. Prior to analysis, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.

e. A continuous release is the discharge of liquid wastes of a nondiscrete volume; e.g., from a volume of system that has an input flow during the continuous release.

f. Sampling and analysis of steam generator blowdown for these species, is only necessary when primary to secondary leakage is occurring as indicated by the condenser air ejector monitor.

g. Frequency designations are defined in Table 4.1-1, Sheet 4.

h. If performance of an isotopic analysis is not possible, liquid releases may be made for up to 7 days on the basis of a gross beta-gamma analysis at an LLD level of $1 \times 10^{-7}$ μCi/ml.

i. Sampling and analysis of steam generator blowdown is not required during COLD or REFUELING SHUTDOWNS.

2. GASEOUS EFFLUENTS

a. Dose Rate

The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY (See Figure 5.1-1) shall be limited to the following:

Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin due to noble gases and less than or equal to 1500 mrem/yr to any organ due to I-131, I-133, tritium and for all radioactive materials in particulate form with half lives greater than 8 days.

1. The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods described in the ODCM.

2. The release rate of radioactive materials, other than noble gases, in gaseous effluents shall be determined to be within the above limits in accordance with the methods described in the ODCM and by obtaining representative samples and performing analyses in accordance with the sampling and analysis program, specified in Table 3.9-3.

3. In the event the dose rate(s) exceeds the above limits, decrease the release rate to comply with the limit(s) given in Specification 3.9.2.a.

b. Dose - Noble Gases

The air dose per reactor to areas at and beyond the SITE BOUNDARY due to noble gases released in gaseous effluents shall be limited, during any calendar quarter, to $\leq$ 5 mrad for gamma radiation and $\leq$ 10 mrad for beta radiation and, during any calendar year, to $\leq$ 10 mrad for gamma radiation and $\leq$ 20 mrad for beta radiation.

1. Cumulative dose contributions for the current calendar quarter shall be determined in accordance with methods described in the ODCM at least once per month.

2. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, prepare and submit a report to the Commission within 30 days, pursuant to Specification 6.9.3.e.

c. Dose - I-131, I-133, Tritium and Particulates

The dose per reactor to a MEMBER OF THE PUBLIC, due to I-131, I-133, tritium and to particulates with half-lives greater than 8 days in airborne effluents released to areas at and beyond the SITE BOUNDARY shall not exceed 7.5 mrem to any organ during any calendar quarter and shall not exceed 15 mrem to any organ during any calendar year.

1. Cumulative dose contributions for the current calendar quarter shall be determined in accordance with the ODCM at least once per month.

2. With the calculated dose from the release of I-131, I-133, tritium and materials in particulate form with half lives greater than 8 days, in gaseous effluents exceeding the above limit, prepare and submit a report to the Commission within 30 days, pursuant to Specification 6.9.3.e.

d. Monitoring Instrumentation

The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.9-4 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.9.2.a are not exceeded. The setpoints shall be determined in accordance with methods described in the ODCM.

1. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by Specification 3.9.2.d, suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable, or change the setpoint so it is acceptably conservative.

2. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels being OPERABLE, take the ACTION shown in Table 3.9-4. If the inoperable instruments are not returned to OPERABLE status within 30 days, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

3. Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the channel operations at the frequencies shown in Table 4.1-4.

e. Radwaste Treatment

The GAS DECAY TANK SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge if the projected gaseous effluent dose per

reactor due to gaseous effluent releases to areas at and beyond the SITE BOUNDARY when averaged over a month exceeds 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation, and the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge if the projected gaseous effluent dose per reactor due to gaseous effluent releases to areas at and beyond the SITE BOUNDARY when averaged over a month exceeds 0.3 mrem to any organ.

1. Doses due to gaseous releases from the site shall be projected at least once per month in accordance with the ODCM.

2. With gaseous waste being discharged without treatment and in excess of the above limits, prepare and submit a report to the Commission within 30 days, pursuant to Specification 6.9.3.g.

f. Gas Decay Tanks

The quantity of radioactivity contained in each gas decay tank shall be limited to less than or equal to 70,000 curies noble gases (considered as Xe-133).

1. The quantity of radioactive material contained in each gas decay tank shall be determined to be within the above limit at least once per day when radioactive materials are being added to the tank and the reactor coolant system total activity exceeds the activity limit of Specification 3.1.4.

2. With the quantity of radioactive material in any gas decay tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

g. Explosive Gas Mixture

The concentration of oxygen in the GAS DECAY TANK SYSTEM shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

TABLE 3.9-3

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

| GASEOUS RELEASE TYPE | SAMPLING[d] FREQUENCY | MINIMUM[d] ANALYSIS FREQUENCY | TYPE OF ACTIVITY ANALYSIS | LOWER LIMIT OF DETECTION (LLD)[a] ($\mu$Ci/cc) |
|---|---|---|---|---|
| A. Gas Decay Tank (Batch) | PR Each Tank Grab Sample | PR Each Tank | Principal Gamma Emitters[b] | $1 \times 10^{-4}$ |
| B. Containment PURGE or VENTING (Batch) | PRg Grab Sample | PRg | Principal Gamma Emitters[b] | $1 \times 10^{-4}$ |
| | | | H-3 | $1 \times 10^{-6}$ |
| C. Condenser Air Ejectors | Mg Grab Sample | Mg Gas Sample | Principal Gamma Emitters[b] | $1 \times 10^{-4}$ |
| | | | H-3 | $1 \times 10^{-6}$ |
| | * Continuous[c] | 4/M * Charcoal Sample | I-131 | $1 \times 10^{-12}$ |
| | * Continuous[c] | 4/M * Particulate Sample | Principal Gamma Emitters[b] | $1 \times 10^{-11}$ |
| D. Plant Vent and Unit 3 Spent Fuel Pit Building | Mg Grab Sample | Mg Gas Sample | Principal Gamma Emitters[b] | $1 \times 10^{-4}$ |
| | M[e,f] Grab Sample | M | H-3 | $1 \times 10^{-6}$ |
| | Continuous[c] | 4/M[h] Charcoal Sample | I-131 | $1 \times 10^{-12}$ |
| | Continuous[c] | 4/M[h] Particulate Sample | Principal Gamma Emitters[b] | $1 \times 10^{-11}$ |
| | Continuous[c] | M Composite Particulate Sample | Gross Alpha | $1 \times 10^{-11}$ |
| | Continuous[c] | Q Composite Particulate Sample | Sr-89, Sr-90 | $1 \times 10^{-11}$ |
| E. All release types for C and D above | Continuous[c] | Noble Gas Monitor | Noble Gases Gross Beta or Gamma | $1 \times 10^{-6}$ |

* Dependent on operability of Condenser Air Ejector iodine and particulate sampler. In the interim, grab samples will be taken and analyzed at least weekly when primary to secondary leakage is detected.

TABLE 3.9-3 (Cont.)

TABLE NOTATION

b. The principal gamma emitters for which the LLD limit specification will apply are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for noble gas emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, Ce-144, and I-131 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level for that nuclide. When a radionuclide's calculated LLD is greater than its listed LLD limit, the calculated LLD should be assigned as the activity of the radionuclide; or, the activity of the radionuclide should be calculated using measured ratios with those radionuclides which are routinely identified and measured.

c. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.9.2.a, 3.9.2.b, and 3.9.2.c.

d. Frequency designations are defined in Table 4.1-1, sheet 4.

e. Tritium grab samples shall be taken at least once per day when the refueling canal is flooded.

f. Tritium grab samples shall be taken at least 4 per month at intervals of no greater than 9 days and a minimum of 48 per year from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

g. Sampling and analysis shall also be performed following shutdown, startup or a THERMAL POWER change exceeding 15% of RATED THERMAL POWER within 1 hour if (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant has increased by more than a factor of 3; or (2) the noble gas activity monitor shows that effluent activity has increased by more than a factor of 3.

h. Sample collection media shall be changed at least 4 times a month at intervals of no greater than 9 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per day for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15% of RATED THERMAL POWER in 1 hour and analyses shall be completed within 48 hours of changing if (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant has increased by more than a factor of 3; and (2) the noble gas activity monitor shows that effluent activity has increased by more than a factor of 3. When samples collected daily are analyzed, the corresponding LLDs may be increased by a factor of 10.

TABLE 3.9-4

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE | APPLICABILITY | ACTION |
|---|---|---|---|
| 1. Plant Vent | | | |
| a. Noble Gas Activity Monitor | (1) | * | 4 |
| b. Iodine Sampler Cartridge | (1) | * | 3 |
| c. Particulate Sampler Filter | (1) | * | 3 |
| d. Sampler Flow Rate Measuring Device | (1) | * | 1 |
| 2. Unit 3 Spent Fuel Pit Building Vent | | | |
| a. Noble Gas Activity Monitor | (1) | * | 4 |
| b. Iodine Sampler Cartridge | (1) | * | 3 |
| c. Particulate Sampler Filter | (1) | * | 3 |
| d. Sampler Flow Rate Measuring Device | (1) | * | 1 |
| 3. Condenser Air Ejector Vent*** | | | |
| a. Noble Gas Activity Monitor | (1) | * | 2 |
| b. Iodine Sampler Cartridge | (1) NOTE 1 | ** | 3 |
| c. Particulate Sampler Filter | (1) NOTE 1 | ** | 3 |
| d. Effluent System Flow Rate Measuring Device | (1) | ** | 1 |
| e. Sampler Flow Rate Measuring Device | (1) NOTE 1 | ** | 1 |

TABLE 3.9-4

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | MINIMUM CHANNELS OPERABLE | APPLICABILITY | ACTION |
|---|---|---|---|
| 4. GAS DECAY TANK SYSTEM Explosive Gas Monitoring System | | | |
| a. Hydrogen and Oxygen | (1) | **** | 5(NOTE 2) |

* At all times

** Daily when primary to secondary leakage is detected (as indicated by the condenser air ejector noble gas activity monitor)

*** N.A. during cold or refueling shutdowns

**** During GAS DECAY TANK SYSTEM operation

NOTE 1 Dependent on operability of condenser air ejector iodine and particulate sampler. In the interim, the minimum channels OPERABLE requirement will be met by grab sampling and analysis.

NOTE 2 Until modifications to the gas analyzing equipment are complete, the following action will be taken:

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately initiate corrective actions to restore the channel to OPERABLE status.

TABLE 3.9-4 (Cont.)

ACTION 1 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once every 8 hours.

ACTION 2 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are collected every 12 hours and analyzed within 24 hours for noble gas activity when primary to secondary leakage is occurring.

ACTION 3 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided samples are continuously collected with auxiliary sampling equipment and analyzed at least four times a month.

ACTION 4 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases, excluding gas decay tank releases, via this pathway may continue provided grab samples are collected at least once per 12 hours and these samples are analyzed for activity within 24 hours.

For Gas Decay Tank Releases:

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank may be released to the environment provided that prior to initiating the release:

1. At least two independent samples of the tank's contents are analyzed for activity, and

2. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup (one performs, one verifies);

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 5* With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the GAS DECAY TANK SYSTEM may continue for up to 30 days provided that grab samples are collected and analyzed for hydrogen and oxygen concentration at least a) once per 8 hours during degassing operations, and b) once per day during other operations.

* See NOTE 2 in Table 3.9-4

TABLE 4.1-1 SHEET 4

* Using moveable in-core detector system
** Frequency only
*** Applies to containment particulate (R11) and gaseous (R12) monitors only. For effluent monitors, refer to Tables 4.1-3 and 4.1-4.
PR - Prior to each release
S - Each Shift
D - Daily
W - Weekly
4/M - At least 4 per month at intervals of no greater than 9 days and a minimum of 48 per year
B/W - Every Two Weeks
M - Monthly
Q - Quarterly
P - Prior to each startup if not done previous week
R - Each Refueling Shutdown
A - Annually
N.A. - Not applicable

† - N.A. during cold or refueling shutdowns. The specified tests, however, shall be performed within one surveillance interval prior to startup.

†† - N.A. during cold or refueling shutdowns. The specified tests, however, shall be performed within one surveillance interval prior to heatup above 200F.

TABLE 4.1-3 SHEET 1

MINIMUM FREQUENCY FOR SURVEILLANCE OF RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | CHANNEL CHECK | CHANNEL CALIBRATION | CHANNEL FUNCTIONAL TEST |
|---|---|---|---|
| 1. Gross Beta or Gamma Radioactivity Monitors Providing Alarm and Automatic Isolation | (3) | (3) | (3) |
| a. Liquid Radwaste Effluent Line | D,PR | R(4) | Q(1) |
| b. Steam Generator Blowdown Effluent Line | D | R(4) | Q(1) |
| 2. Flow Rate Monitor | | | |
| a. Liquid Radwaste Effluent Line | D(2) | R | Q |
| b. Steam Generator Blowdown Effluent Line | D(2) | R | Q |

TABLE 4.1-3 SHEET 2

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if the following condition exists:

1. Instrument indicates measured levels above the alarm/trip setpoint.

(2) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per day on any day on which continuous, periodic or batch releases are made.

(3) Frequency designations are defined in Table 4.1-1, Sheet 4.

(4) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

TABLE 4.1-4 SHEET 1

MINIMUM FREQUENCY FOR SURVEILLANCE OF RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

| INSTRUMENT | CHANNEL CHECK (5) | CHANNEL CALIBRATION (5) | CHANNEL FUNCTIONAL TEST (5) |
|---|---|---|---|
| 1. Plant Vent | | | |
| a. Noble Gas Activity Monitor | D(1) | R(6) | Q(3) |
| b Iodine Sampler Cartridge | W | N/A | N/A |
| c. Particulate Sampler Filter | W | N/A | N/A |
| d. Sampler Flow Rate Measuring Device | D | R | N/A |
| 2. Unit 3 Spent Fuel Pit Building Vent | | | |
| a. Noble Gas Activity Monitor | D | R(6) | Q |
| b. Iodine Sampler Cartridge | W | N/A | N/A |
| c. Particulate Sampler Filter | W | N/A | N/A |
| d. Sampler Flow Rate Measuring Device | D | R | N/A |
| 3. Condenser Air Ejector Vent | | | |
| a. Noble Gas Activity Monitor | D | R(6) | Q(2) |
| b. Iodine Sampler Cartridge * | W | N/A | N/A |
| c. Particulate Sampler Filter * | W | N/A | N/A |
| d. Effluent System Flow Rate Measuring Device | D | R | N/A |
| e. Sampler Flow Rate Measuring Device * | D | R | N/A |
| 4. GAS DECAY TANK SYSTEM Explosive Gas Monitoring System | | | |
| a. Hydrogen and Oxygen Monitor | D | Q(4) | M |

* Dependent on operability of condenser air ejector iodine and particulate sampler.

TABLE 4.1-4 SHEET 2

TABLE NOTATION

(1) A CHANNEL CHECK for the plant vent noble gas activity monitor is performed prior to making a release through the GAS DECAY TANK SYSTEM release pathway.

(2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if the following condition exists:

1. Instrument indicates measured levels above the alarm/trip setpoint.

(3) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway (the GAS DECAY TANK SYSTEM release pathway) and control room alarm annunciation occurs if the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint.

(4) The CHANNEL CALIBRATION shall include the use of standard gases containing a nominal:

1. One volume percent oxygen, balance nitrogen and

2. Four volume percent oxygen, balance nitrogen.

(5) Frequency designations are defined in Table 4.1-1, Sheet 4.

(6) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

i. Records of annual physical inventory verifying accountability of sources on record.

6.10.2 The following records shall be retained for the duration of the Facility Operating License:

a. Records and drawing changes reflecting facility design modifications made to systems and equipment described in the Final Safety Analysis Report.

b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.

c. Records of facility radiation and contamination surveys.

d. Records of radiation exposure for all individuals entering radiation control areas.

e. Records of gaseous and liquid radioactive material released to the environs.

f. Records of transient or operational cycles for those facility components designed for a limited number of transients or cycles.

g. Records of training and qualification for members of the plant staff for the duration of their employment.

h. Records of in-service inspections performed pursuant to these Technical Specifications.

i. Records of Quality Assurance activities as required by Corporate Quality Assurance Manual.

j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.

k. Records of meetings of the PNSC and the CNRB.

l. Records for Environmental Qualification which are covered under the provisions of paragraph 6.13.

m. Annual Radiological Environmental Monitoring Reports and records of analyses transmitted to the licensee which are used to prepare the Annual Radiological Environmental Monitoring Report.

## 6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

## 6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20:

a. Each High Radiation Area in which the intensity of radiation is greater than 100 mRem/hr but less than 1000 mRem/hr shall be barricaded and conspicuously posted as a High Radiation Area and entrance thereto shall be controlled by issuance of a Radiation Work Permit and any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously indicates the radiation dose rate in the area.

b. Each High Radiation Area in which the intensity of radiation is greater than 1000 mRem/hr shall be subject to the provisions of 6.12.1(a) above, and in addition locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under administrative control.